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| (21) International Application Number: <b>PCT/US99/01144</b><br>(22) International Filing Date: <b>20 January 1999 (20.01.99)</b><br>(30) Priority Data:<br>60/072,002      21 January 1998 (21.01.98)      US<br>60/089,940      19 June 1998 (19.06.98)      US<br>09/132,104      10 August 1998 (10.08.98)      US<br>(71) Applicant: <b>UNIVERSITY OF HAWAII [US/US]; Suite 280, 2800 Woodlawn Drive, Honolulu, HI 96822 (US).</b><br>(72) Inventors: <b>WAKAYAMA, Teruhiko; c/o Ryuzo Yanagimachi, 1425 Ward Avenue 17W, Honolulu, HI 96822 (US). YANAGIMACHI, Ryuzo; 1425 Ward Avenue 17W, Honolulu, HI 96822 (US).</b><br>(74) Agents: <b>ARNDT, Barbara, E. et al.; Jones, Day, Reavis &amp; Pogue, North Point, 901 Lakeside Avenue, Cleveland, OH 44114 (US).</b> |  | (81) Designated States: <b>AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).</b><br><b>Published</b><br><i>Without international search report and to be republished upon receipt of that report.</i> |                                                                 |
| (54) Title: <b>FULL TERM DEVELOPMENT OF ANIMALS FROM ENUCLEATED OOCYTES RECONSTITUTED WITH ADULT SOMATIC CELL NUCLEI</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                 |
| (57) Abstract<br><p>Animals are produced following injection of adult somatic cell nuclei into enucleated oocytes. The invention provides a method for cloning an animal by directly inserting at least a portion of an adult somatic cell nucleus into a recipient enucleated oocyte. Preferably, the nucleus is inserted by microinjection and, more preferably, by piezo electrically-actuated microinjection. The oocyte is activated prior to, during, or up to about 6 hours after insertion of the nucleus, by electroactivation or exposure to a chemical activating agent, such as Sr<sup>2+</sup>. The activated renucleated oocyte is allowed to develop into an embryo and is transplanted to a host surrogate mother to develop into a live offspring.</p>      |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                 |
| <br>*162162*<br><br>*G00002*                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  | <br><b>A</b><br><br><b>B</b><br><br><b>C</b>                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                 |

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